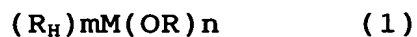


## ABSTRACT

The present invention provides a hologram recording material which attains high refractive index change, high sensitivity, low scattering, environment resistance, durability, low dimensional change and high multiplicity, and is suitable for volume hologram recording; a process for producing the hologram recording material; and a hologram recording medium. A hologram recording material comprising a metal oxide matrix and a photopolymerizable compound, said metal oxide matrix having a halogen-containing organic group. The metal oxide matrix is formed by hydrolysis and polymerization reaction of a metal alkoxide compound, and said metal alkoxide compound includes a metal alkoxide compound represented by the following general formula (1):



wherein  $R_H$  represents the halogen-containing organic group,  $R$  represents an alkyl group,  $M$  represents a metal atom,  $m$  represents 1 or 2, and  $m + n$  represents the valence of the metal atom  $M$ .